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Tapio S. Katko

Pääkirjoitus

Vesihuoltolaitosten historiat imagon nostajana

Vesihuollon parissa toimivat keskeiset osapuolet ovat vuosien varrella julkaisseet erilaista kirjallista materiaalia historiallisesta kehityksestään ja toiminnastaan pitkällä aikavälillä. Näitä ovat muun muassa kunnalliset vesi- ja viemärilaitokset, osuuskunnat ja vesiyhtymät, vesihuollon viranomaiset ja alalla toimivat yritykset. Aiemmin nämä julkaisut ovat olleet - ja pienemmät ovat nykyäänkin - luonteeltaan historiikkeja, joihin on taltioitu keskeisiä tapahtumia ja mahdollisia aikalaiskertomuksia vuosien varrelta. Historiikki ei yleensä pyri käyttämään alkuperäislähteitä eikä analysoimaan kehitysilmiöitä vaan on enemmän dokumentoiva, mikä on arvokasta sekin. Laitokset ovat julkaisseet niitä erityisesti täyttäessään täysiä kymmeniä vuosia, vaikka monesti onkin makuasia, mistä laitoksen syntyajan laskee. Usein ajankohtana pidetään päivää, jolloin vedenjakelu tai jätevesien johtaminen alkoivat.

Vähitellen historiikkeihin on tullut myös tutkimuksellista otetta. Silloin tavoitteena on tutkia huolella arkistot, keskeiset päätökset ja niiden taustat, vuosikertomukset, muu kirjallinen materiaali, kuva-aineistot, lehtileikkeet sekä haastatella useita laitosten ja muiden sidosryhmien eri tehtävissä toimivia ja toimineita henkilöitä. Osaltaan tähän kehitykseen on vaikuttanut kansainvälisestikin kasvanut kiinnostus ympäristöhistoriaan. Siinä vesiasiat ja vesihuolto ovat keskeisessä asemassa.

Kirjatulla historiatiedolla on tärkeä merkitys sinänsä, vaikka se ei näkyisikään suoraan jokapäiväisessä toiminnassa. Historiakirjalla on käyttöä hakuteoksena ja se parantaa osaltaan koko toimialan imagoa. Se, että paikkakunnan vesihuollon historia on kerätty muistiin, on jo arvo sinänsä. On osoittautunut, että monet pääongelmat ovat vesihuoltoalalla pysyneet vuosikymmenten kuluessa pohjimmiltaan yllättävänkin samoina. Toisaalta jokainen hanke on tuonut mukanaan muutamia löydöksiä, joita ei ole tunnettu tai aiemmin tiedostettu. Hankkeilla on saatu kerätyksi talteen kokemusperäistä tietoa ja näkemystä henkilöiltä, joista osa on jo poistunut keskuudestamme. Valitettavasti joskus on oltu tältä osin myöhässä. Haastattelujen kautta voidaan laitoksen henkilökuntaa myös sitouttaa ja aktivoida sekä saada heiltä vinkkejä tapahtumisen taustoista.

Laitosten vesihistoriateoksia on käytetty yleisesti lahjaesineenä merkkipäivillä ja muissa vastaavissa tilaisuuksissa. Samoin kirjat ovat toimineet hyvinä aineistoina laitosvierailujen yhteydessä. Kirjoja on myös jaettu uusille luottamushenkilöille tiedoksi laitoksen kehityksestä ja toimintatavoista. Useimmat laitosten tilaamat kirjat on julkaistu joko laitoksen tai muilla verkkosivuilla kokonaisuudessaan ja näin saatu samalla laajempaan jakeluun. Parhaimmillaan niitä on ladattu tuhansia ja normaalisti satoja kappaleita. Eräs vesilaitosjohtaja toteaa: ”yhdessä teknologian ja autonomian kehityksen kanssa hyvän henkilöstön saatavuus on tullut vaikeammaksi kuin vuosisadan alkupuolella samalla kun asiakkaat sata kertaa vaativammaksi”. On myös kiintoisaa pohtia, miksi tietyt vaihtoehdot jäivät toteutumatta.

Todistettavasti laitoksen historiakirjaa on käytetty päätöksenteon apuna silloin, kun on pitänyt tietää tehtyjen valintojen ja kehityspolkujen taustoja. Jokaisen sukupolven on myös syytä kirjoittaa oma historiansa ja tulkintansa uusissa tilanteissa. Kokemus osoittaa, että työn vaatimat resurssit riippuvat olennaisesti siitä, minkälaiset tavoitteet hankkeelle asetetaan. Sopivasti käyttämällä erilaisia menetelmiä ja aineistoja paikallisten olosuhteiden mukaan historiateoksista saadaan oman näköisensä.

Muista Pohjoismaista, Euroopasta ja Yhdysvalloista on muodostunut käsitys, että vesihuoltolaitokset ja muut toimijat ovat varsin vähän analysoineet omaa kehitystään historiahankkeiden kautta. Tässä suhteessa suomalaisilla on erityisen hyvät asemat vaikkapa pohdittaessa, miten oman osaamisensa pohjalle voisi rakentaa koulutus-, tutkimus- ja muuta vientitoimintaa (luku 13, 15). Vesihuoltolaitos tai muu osapuoli saattaa helposti pitää aluksi tällaisten historiahankkeiden tukemista kalliina. Niihin panostus on kuitenkin varsin halpaa suhteutettuna monen muuhun toimintaan ja saavutettuun hyötyyn. Hankkeiden päätyttyä tämä puoli helposti myönnetään.

Niin kuin on useita tulkintoja historiasta, niin on myös vaihtoehtoisia tulevaisuuksia ja kehityspolkuja, joihin tulisi pyrkiä vaikuttamaan.

Tapio S. Katko

Editorial

Relevance of history for current water services management and governance

Water services covering especially water supply, sewerage and stormwater form in many countries the most important purpose of water use. In most cases these services are provided (arranged) by local governments while the services are produced by publicly-owned water utilities of various types. As a service of necessity their history sheads light to the overall development of cities and communities.

Based on their own initiatives several water utilities have produced some booklets or simplified historical stories of their development, commonly in relation to their anniversaries. Often these include also stories of small water systems, water cooperatives in the Finnish case. All these efforts are valuable. However, we have as a research team tried to promote the idea of more formal history books based on scientific research.

In such projects we have used a variety of sources and methods: archive exploring, written documents and papers, annual reports, photo archives, newspaper articles and personal interviews of utility members at various levels and times, as well as representatives of related stakeholders. In most cases along the project the client has typically wished a double number of interviewed persons as originally planned. Such interviews bring background information and views that are useful for the authors and also promote the interest among the staff members. Through such combination each of the books will be tailor-made and unique as such.

Such books, according to the clients, have proved to be useful as a source book and reputation management. The cultural heritage of such documents can also be noted more widely by the communities. These history books also imply how several of the major challenges have been on the agenda for long: some of them might have vanished and some reborn along with time. Yet, most of the projects have also revealed new findings. Documentation and analysis of tacit knowledge is also seen important since some 40 % of the current work staff will become retired within the next decade.

In addition to using the books as personal gifts we have evidence of cases where the books have been utilized as sources for strategic decision making. We have managed to agree on the policy that the books are published in large numbers and they are also available freely in electrodic form. Likely the key challenge for the researchers is to be able to make the clients and their decision makers interested and especially foresee the relevance and importance of such history books. Later, the clients have given overwhelmingly positive feedback stating even that in fact such activites are quite cheap – often contrary to their original views.

Figure 1. In the picture (from left to right) is the new editing team, Dr. Petri S. Juuti, Dr. Tapio S. Katko, Dr. Riikka Rajala and Dr. Harri Mäki

Dr. Jan Kunnas

A Darwinian explanation to the birth, meaning and practice of environmental history

Abstract

Environmental history is often described as an offspring of the environmental movement in the Western countries in the 1960s and 1970s. Alfred W. Crosby, however, lists several beginnings of environmental history in America from the 1920s and onwards "before it was finally well launched". Finding a unique point of creation would also require an unambiguous definition of environmental history. There seems, however, to be at least as many definitions of environmental history as there are scholars trying to define it. I argue, taking an analogy from natural sciences, that the search for a single point of creation, a.k.a. creationism, should be abandoned in favor of an evolutionary path towards present-day environmental history. An evolutionary approach could also be useful for the practice of environmental history itself. By examining the interaction between the humans and their environment in a co-evolutionary way, we can avoid the trap environmental determinism.

Another concept from ecology that of ecological niches, could again be useful in understanding the spread and development of environmental history. For example, in some countries, historical geography filled the niche of environmental history. Furthermore, the need to fill a great variety of ecological niches explains the great diversity within environmental history. This is the very reason for the large reliance on multidisciplinary or interdisciplinary approaches in environmental history. Obvious intertwining disciplines include anthropology, ecological economics, historical ecology, economic and business history, social and diplomatic history and the history of technology.

Keywords: Ecological niches, Environmental History, Evolution, Multidisciplinary, Interdisciplinary.

A Darwinian explanation to the birth, meaning and practice of environmental history

Searching for the roots

Environmental history is often described as an offspring of the environmental movement in the Western countries in the 1960s and 1970s.[1] It indeed emerged as a distinctive academic discipline during the late 1960s or early 1970s. The American Society for Environmental History was founded in 1976, while its European equivalent was not set up until 1999. The expression *environmental history* is usually attributed to Roderick Nash, who used it in an article based on his presentation at the 1969 meeting of the Organization of American Historians.[2]

Some often mentioned early examples of environmental history are Alfred W. Crosby's *The Columbian Exchange: Biological and Cultural Consequences of 1492* (1972), Lynn White's article *The Historical Roots of Our Ecological Crisis* (1967), and Clarence Glacken's *Traces on the Rhodian Shore* (1967), a history of Western civilization's conceptions of the environment from the earliest times to the eighteenth century. Including *Man's Role in Changing the Face of the Earth*, a voluminous anthology of essays on man's impact on the environment published in 1956, would push the starting point another decade backwards.[3]

Timo Myllyntaus and Mikko Saikku trace, however, the roots of environmental history back to the late 19th and early 20th centuries, to scholars like Frederick Jackson Turner, Walter Prescott Webb and James C. Malin, who "stressed the role played by the natural environment in the formation of American society". They identify a similar approach in their Finnish contemporaries, "the historian Väinö Voionmaa and the anthropologist Helmer Smeds, who claimed that natural conditions had profoundly shaped Finnish society."[4]

A similar approach can also be found in Fernand Braudel's voluminous history of the Mediterranean world published in 1949. With this loose definition of environmental history, even Ibn Khaldun (1332-1406) and his discussions about how environmental conditions shaped different peoples cannot either be ignored.[5]

Fernand Braudel's inclusion in environmental history proper has been contested, arguing that he tended to deploy environmental factors only as a backdrop of history.[6] Alfred W. Crosby, on the contrary, clearly considers Braudel to be environmental history proper, but deems Frederick Jackson Turner to be still only halfway. Crosby, however, lists several beginnings of environmental history in America from the 1920s and

[1] MacEachern 2001.
[2] Nash 1970, 249-260. The usual reference is, however, an article published two years later: Nash 1972, 362-372.
[3] Crosby 1972; White Jr 1967, 1203–7; Glacken 1967; Thomas 1956.
[4] Myllyntaus and Saikku 2001, 3; Smeds 1935.
[5] Braudel, 1949 & 1972; Khaldūn 1967.
[6] Beinart 2000, 269-302; This notion is opposed by Moore 2003, 431–58.

onwards "before it was finally well launched." Adding George Perkins Marsh to the list, would add yet another beginning as early as 1864, when his monumental *Man and Nature* was published.[7]

Definitions and subjects for environmental history

Finding an unique point of creation would also require an unambiguous definition of environmental history. There seems, however, to be at least as many definitions of environmental history as there are scholars trying to define it. This is no wonder as the Merriam-Webster English Dictionary gives four definitions for the word *environment* alone.[8]

Back in 1972, Roderick Nash argued that Environmental history would refer to the past contact of man with his total habitat, going beyond the human dimension to embrace all life and, ultimately, the environment itself. Donald Worster again says "that the field deals with all the interactions people have had with nature in past times," or that it is "about the role and place of nature in human life".[9]

Verena Winiwarter is more specific. According to her, environmental history is concerned with two different endeavours:

1) The study of past perceptions of nature, of attitudes, traditions, etc.
2) Reconstruction of past environments, of their biological, geological, hydrological, pedological and atmospheric status.[10]

A more concise description is given by J. R. McNeill: "the history of the mutual relations between humankind and the rest of nature." It is also less inclusive as his requirement of mutual relations would drop early candidates like Turner or Ibn Khaldun, who only considered the impact of nature on humans and not the other way around. Neither does it include the second part of Winiwarter's list if the past environments are not created through human actions. [11]

Alternatively, we could try to define environmental history through its subjects of research. A recent encyclopedia of environmental history includes topics from arts to technology and science to different religions, from people to zebra mussels and from domesticated plants and animals to nonliving resources. Nevertheless, Peter Coates found the reason to lament that it had no entries for sound or noise. A reasonable reason for lament considering that Alain Corbin had added odors to history with *Le Miasme et la jonquille*

[7] Crosby, 1177 – 1189; Marsh 1864.
[8] http://www.merriam-webster.com/dictionary/environment (accessed 2.2.2011)
[9] Nash, 363; Worster 1988, vii & 292.
[10] Winiwarter 2003, 5.
[11] McNeill 2003, 5-43.

published in 1982 and translated to English in 1986, and Raymond W. Smilor sound with his essay on early twentieth-century American efforts to combat urban noise published in 1977. In defense of the editors it should, however, be mentioned that soundproofed and deodorized the encyclopedia was still running over 1400 pages, and had a time scale of several billions of years and a geographical scale from local to global covering all continents.[12]

This same broad view is also apparent from a collection of short articles about future directions for the field in celebration of the tenth year of the journal *Environmental History*. The subjects suggested range from artificialization of our own bodies and the environment to the intersection between health, disease and the environment, and the environmental consequences of consumer behaviour or economic specialization. Several authors ask for detailed studies of the ecological footprint in different parts of the world. One writer wants research on ecosystem management while another suggests investigation of cities as urban ecosystems. The only recurring aspect seems to be an emphasis on the importance of interdisciplinarity.[13] Elsewhere Edmund Russell calls for a rethought of the relationship between war, nature, and human history, and quite successfully.[14]

From creationism to evolution

I argue that the whole search for a starting point is pointless. Taking an analogy from natural sciences, the search for a single point of creation, a.k.a. creationism, should be abandoned in favor of an evolutionary path towards present-day environmental history. In the book *Evolutionary History*, Edmund Russell shows the role that evolution can play in historical research, especially that of environmental history and history of technology. Here, I show that an evolutionary approach can also be useful to understand the birth, development and future of environmental history.[15]

Barbara Leibhardt´s sorting of environmental histories according to their level of theoretical complexity can be interpreted as such an approach, although she does not mention the word evolution. In her illustrative example, she "places Walter Prescott Webb and his focus on the influence of the Great Plains on human technology at the simplest end of the continuum; and Carolyn Merchant and her model of ecological and human reproductive, productive, and cognitive processes at the most complex end." [16]

[12] Krech, McNeill and Merchant 2004; Coates 2005, 636-665; Corbin 1982 & 1986; Smilor 1977, 23-38.
[13] Rome et al. 2005, 30-109.
[14] Russell 2001, 2. For some answers to this call see: McNeill and Unger 2010; Laakkonen and Vuorisalo 2007; Tucker and Russell 2004.
[15] Russell 2011.
[16] Leibhardt 1988, 23-36; Webb 1931; Merchant 1987, 265-74. At middle ground she placed in ascending order: Crosby 1986; Cronon 1983; Franke and Chasin 1980; Perkins 1982; McEvoy 1986.

Another question is whether increased theoretical complexity is desirable if we want to increase our understanding of the human-environment interactions. Leibhardt herself repeats, although not supports, a fear received from a fellow historian, that as the complexity of the model increases, the researcher may fall into a trap where "everything is everything". Continuing on my evolutionary approach, I add that in natural selection increasing complexity is no goal in itself. In some cases, a complex theory might be needed, in other cases a simple one can be of more use.[17]

An evolutionary approach would also allow apparent scientific dead ends to be crossbreed back to life, in the same way as some of the genes of the *Homo neanderthalensis* continue to exist as they interbred with *Homo sapiens* before going extinct. Richard E. et al. suggest that between 1 and 4 % of the genomes of people in Eurasia today are derived from Neandertals.[18]

Similarly, the "false starts" of environmental history can be bred back to life and bring helpful insights to present day practice. An example of such a crossbreeding is the continued re-use and re-cycling of Turner´s frontier hypothesis discussed above. Another illustrating example of such activity is the renaissance of George Perkins Marsh, who wrote global environmental history over a century before world history emerged as a distinct field of study. Again, I consistently refuse to use the world invented.[19]

Ecological niches

Another concept from ecology that of ecological niches, could again be useful in understanding the spread, development and varieties of environmental history. For example, Graeme Wynn and Matthew Evenden hypothesize that a resurgence of interest in historical geography in 1970s and 1980s Canada may account for the relatively weak development of environmental history during this period. Sverker Sörlin and Paul Warde ask whether the same could me not be argued for England: "where the inheritance of W. G. Hoskins at Leicester or H. C. Darby at Cambridge, among others, conquered the ground to which environmental history might later aspire?"[20]

It could be argued that in these countries historical geography filled the niche that environmental history took in other countries. As both disciplines fill the same niche, the need to understand the interaction between humans and their environment in the past, we could also ask whether there is any real distinction between them. Would anyone, for example argue, that I. G. Simmons´ An Environmental History of Great Britain, is not environmental history proper, as he is an Emeritus Professor of Geography. Indeed the national network

[17] Leibhardt 1988, 33
[18] Green et al. 2010, 710-722.
[19] Marsh 1864.
[20] Wynn and Evenden, 54 & 40; Sörlin and Warde 2009, 215-246 & 200, 107-30.

in Canadian history & environment NiCHE (http://niche-canada.org/) that emerged in 2004-05 aims to bring together historians, geographers, and other researchers who study nature and humans in Canada's past.[21]

The need to fill a great variety of ecological niches and circumstances also helps to explain the great diversity within environmental history (Picture 1). A meaningful study of the mutual relations between humankind and the rest of nature requires different methods in different locations (different continents, urban locations, wilderness…) and circumstances (wet/arid environments, polluted/pristine environments…). I argue that this is the very reason for the large reliance on multidisciplinary or interdisciplinary approaches in environmental history.

Picture 1: The need to fill a great variety of ecological niches and circumstances also helps to explain the great diversity within environmental history.

Pictures by the author from China, Finland, Canada and Ecuador.

[21] Simmons 2006.

Multidisciplinarity/Interdisciplinarity

Bernard C.K. Choi and Anita W.P. Pak define multidisciplinarity and interdisciplinarity in the following way:

> Multidisciplinarity draws on knowledge from different disciplines but stays within their boundaries. Interdisciplinarity analyzes, synthesizes and harmonizes links between disciplines into a coordinated and coherent whole.[22]

Through its more holistic approach interdisciplinarity can be interpreted as being more in the general spirit of environmental history. Indeed a Google scholar search with the words "environmental history" and "interdisciplinarity" brought 7 370 hits, while replacing the later with "multidisciplinarity" halved the hits to 3 340. In practice, the concepts are though used more or less as synonyms.[23]

Perhaps the most obvious intertwining discipline is historical geography, providing a geographical analysis of the past. Alan R. H. Baker mentions William Cronon´s Nature´s Metropolis as the study in environmental history, which has made the most impact on historical geography, while Cronon himself drew inspiration from a wide range of geographical concepts.[24] An example of the intertwined interests of environmental history and historical ecology is the internet based Czech journal Klaudyán, publishing articles on all aspects of historical geography, environmental history and cognate fields (e.g. landscape ecology, eco-politics, history of sciences and environmentalism in particular).[25]

Another rather obvious candidate is the emerging interdisciplinary research program of historical ecology. William Balée's definition for it could probably be accepted by most researchers calling themselves environmental historians: "Historical ecology is a research program concerned with the interactions through time between societies and environments and the consequences of these interactions for understanding the formation of contemporary and past cultures and landscapes."[26]

Back in 1972, Roderick Nash mentioned fields as diverse as anthropology, theology, psychology, ecology and geology as sources for his path breaking course in environmental history.[27] Christine Meisner Rosen again tries to persuade readers about the urgent importance of engaging in research that integrates business and environmental history as it might "provide crucial insights into the origins of the mounting environmental and public-health crises that loom before us." An early example of such integration is George

[22] Choi and Pak 2006, 351–364.
[23] http://scholar.google.fi/ (Search done 13 June 2011)
[24] Baker 2003, 81.
[25] http://web.natur.cuni.cz/ksgrrsek/klaudyan/ (Accessed 6 May 2011).
[26] Balée 2006, 76.
[27] Nash 1972.

P. Marsh´s reflection on how the invention of the silk hat saved the beaver from an immediate danger of extirpation.[28]

In a special issue of the Journal of Social History on the future of social history, Stephen Mosley calls for a closer communication between social and environmental history to their mutual benefit. From his expertise on the emergence of the Environmental Justice Movement Martin V. Melosi suggests several points of inquiry worthy of deeper historical analysis:[29]

1) environmental equity, especially as it relates to race, class, and gender[30]
2) environment as a cultural construct
3) the clash between anthropocentrism and ecocentrism
4) the importance of urban environmental problems
5) the nature of the environmental movement itself.

A theme issue of Diplomatic History illustrates "how an environmental perspective might reconfigure the diplomatic history of the past half-century or so". This was though not the first call for an environmental perspective issued in the journal. In 2005 Kurk Dorsey called diplomatic historians to deal with the dinosaur: ...who fails to pay attention to its environment, fouls its own habitat (and let us not forget that there are many other tenants in that habitat), and seems largely incapable of taking past lessons on the subject and applying them to impending problem. In fact, we should be prepared to study the swamp itself, paying more attention to how nature influences foreign policy."[31]

A decade earlier, Mark H. Lytle argued that the environmental approach provides a means for diplomatic historians to reconceptualize their work while continuing to address many of the same issues. As guidelines he suggests Barry Commoner´s four central laws of ecology. These are worth repeating here as they could serve as guidelines for all historians. They could also be used as yet another description of environmental history, as all historical research following these guidelines could be defined as environmental history:[32]

1) Everything is connected to everything else.
2) Everything must go somewhere
3) Nature Knows best
4) There is no free lunch

James Williams again lifts up the connection with the history of technology. He argues: "over time, both technology and the environment have evolved together, and each reflects the influence they have on one

[28] Nash 1972; Marsh 1864, 84; Meisner Rosen 2005, 77-79.
[29] Mosley 2006, 915-933; Melosi 1995, 1-16.
[30] See also Merchant 2003 & 1980; Bullard 2000.
[31] Worster 2008, 639; Dorsey 2005, 575.
[32] Lytle 1996, 279-300; Commoner 1971.

another in this evolutionary reciprocity."[33] Indeed, many environmental historians already mentioned fits comfortably under the label historians of technology:

- Walter Prescott Webb, with his account on the importance of technological inventions like railroad, Colt revolver, barbed wire, machinery for drilling deep wells and the windmill for the settlement of the arid plains. In a sense Webb brought the industrial revolution to Turner´s frontier.[34]
- Lynn White´s main area of research was medieval technology, which can also be seen in the argumentation in *The Historical Roots of Our Ecological Crisis.* Notwithstanding the importance of this text, his main contribution to historical research is arguably *Medieval Technology and Social Change.*[35]
- William Cronon's N*ature's Metropolis and its* "illusory boundary" between human beings, and especially their technology, and the natural world is lifted up as "an important precursor to the establishment of Envirotech, the group from the Society for the History of Technology and the American Society for Environmental History."[36]
- Finally it is worth to mention Joel Tarr, who studies the environmental history of cities. In 2008 the Society for the History of Technology awarded him its highest award, the Leonardo da Vinci Medal for his contributions to the convergence of environmental and technological history. The Joel A. Tarr Envirotech Article Prize founded in his honor again recognizes the best published article in either a journal or article collection on the relationship between technology and the environment in history.[37]

Quantitative methods, economic history and economics

According to J. R. McNeill, environmental history resembles through its multidisciplinarity econometric history, "which also challenged historians to develop new and unfamiliar set of skills." One general lesson it can provide to history in general is not to fear numbers. D. N. McCloskey advises: "The attempt to produce a number is usually illuminating, even when no number is in the end producible."[38] In the end the most important quantitative methods are fairly simple: +, -, × and ÷.

Scarce and partial sources are some of the major problems in most historical writing. This problem is emphasized in environmental history, as we often have to rely on records created long before current environmental thinking. The use of quantitative methods is one important remedy for this problem. A growing use of quantitative methods along with increasing computing capacity has greatly widened the range

[33] Williams 2010, 9-25.
[34] Webb 1931; A nice account of Webb´s continuing legacy is presented by O'Har 2006, 156-163.
[35] White 1962.
[36] Cutcliffe 2010, 728-737.
[37] McShane and Tarr 2007; Tarr 2003 & 1996; http://envirotechweb.org/2011/02/09/2011-article-prize/.
[38] McNeill 2003; McCloskey 1987, 41.

of materials that can be used in historical research and the possibility to ask new questions. Thus, for example, social historians were able to reconstruct the lives of ordinary people by aggregating the rather thin and stereotypic information contained in the records of the encounters between them and the public authorities.[39]

Jan Kunnas goes as far as claiming that leaving matters uncalculated due to scarcity of sources can be even more misleading than rough calculations. He supports this claim with calculations showing that burning cultivation of peatlands, which has been neglected in historical research, was by far the greatest source of carbon dioxide in Finland during the whole of the nineteenth century and at the beginning of the twentieth century. Another neglected occupation, the production of potash might have consumed as much wood during the 19th century as the well researched production of tar.[40]

The dividing line between present day economic history and economics might be blurry. Nevertheless, it might sometimes be worthwhile to take the full step to economics in search for useful theories. Historical methods can be used to test economic theories, and economic tools to provide answers to historical.

For example, the theoretical background for Cronon´s backwards reading of Frederick Jackson Turner is the nineteenth century economist Johann Heinrich von Thünen´s Isolated State –theory, although Louis P. Cain, Brian Paget and Richard Walker claims that Cronon misreads Thünen´s intellectual heritage. Von Thünen's idealized economy creates a series of concentric rings of agricultural activity based primarily on the cost of transport to market and the land rent a farmer can afford to pay surrounding the central market place. Following this theory Cronon creates the following zones around Chicago: intensive agriculture (dairy, orchard, market gardens); extensive agriculture (unrotated wheat, etc.); open range livestock grazing; trapping, hunting and Indian trade; and beyond the fourth ring the wilderness.[41]

Jan Kunnas and Timo Myllyntaus again argue that there are lanes in the other direction as well. They have used historical methods to test an economic theory, namely the environmental Kuznets curve -hypothesis, which proposes that some pollution or measures of environmental degradation would follow an inverted U-curve related to incomes, increasing at low income levels and decreasing at high income levels. Using historical methods they add two new explanations for the existence of an Environmental Kuznets curve:[42]

1) The severity of environmental degradation might itself create a turning point for the emissions, or in some cases fear of severe effects.

[39] Sewell 2005, 27.
[40] Kunnas 2005 & 2007.
[41] Cronon 1991, 48-49; Thünen, 1910; Hall 1966; Cain 1992, 503–4; Paget & Walker 1994, 152-162.
[42] Kunnas and Myllyntaus 2010, 1587–1593. The EKC concept was coined by Panayotou (1993) after the similar theory of income distribution proposed by Kuznets (1955).

2) What at a first glance seems to be an environmental improvement might just be a transformation of one environmental problem into another. What in an ahistorical perspective seems to be one single environmental Kuznets curve are in fact several sequential curves.

Through its multidisciplinary approach and subjects of interests, environmental history especially resembles ecological economics. Indeed in 2002, the flagship journal in the field, *Ecological Economics* had a special section on environmental history that focused on social metabolism as a strategy of historical inquiry for understanding the use of resources and energy over time. Joan Martinez-Alier and Heinz Schandl reasoned the special section in the following way: "Economic history, although it has a wider focus than strict economic theory, has mirrored the developments in economics. …As ecological economics grows, a corresponding ecological-economic history (or environmental history) will develop..."[43]

This special section was followed by another one in 2011, that examined the past as a way of understanding the present as well as the future, and has in-between also published several articles with a historical approach.[44]

A matter of perspective

The very existence of environmental history as a separate field can also be questioned: "…if the environment is everything from the microparticle to the universe, then all history, it may be argued, is collapsible to environmental history, which in turn ceases to be distinguishable from history as such."[45] In my view, it is a matter of perspective, whether the environment is just a background where "history" takes place, or whether the environment is one of the historical actors.

The lack of a unanimous description of environmental history or a consensus of the most important subjects of research has not held back its spread around the globe. Or perhaps that is the very reason for its increasing popularity, the reason that more and more researchers want to identify themselves as environmental historians, whatever they mean with this self-appointed description. Indeed, the lack of a clear definition of environmental history can be seen as a sign of disciplinary health

[43] Martinez-Alier and Schandl 2002, 175-176.
[44] Paavola and Fraser 2011, 1266-1268.
[45] Weiner 2005, 404-420.

Works on environmental history have been written for all continents, including the Antarctica.[46] The Environmental History Bibliography Database upheld by the Forest History Society contains over 40 000 annotated citations to books, articles, and dissertations published from 1633 to the present, and approximately 1 500 citations are added each year.[47]

Nevertheless, one common feature of environmental history is the prevailing belief that we can learn from history. Environmental history easily becomes a dismal science, as it is digging into past environmental problems showing that the history of humankind is a history of pollution and environmental decay. However, as already Voltaire knew, great errors of the past are very useful in many ways.[48] Digging into past environmental problems might prevent repeating them. In other cases, finding similarities between past problems and current ones might help solve the later ones. Sometimes hopeful insights from past success stories can also be found. To achieve these goals it is, however, necessary to go beyond a mere reconstruction of past events to an understanding of the underlying processes.

Closing frontiers

Similar circumstances might also appear at different times in different locations around the globe. Thus, halfway or not, Frederick Jackson Turner´s thesis that the western frontier was the prime force in shaping the American society could is still useful in environmental history.[49]

In a side path, to an article criticizing Lynn Whites´ simple model explaining the environmental crisis by the Judeo-Christian tradition, Lewis W. Moncrief gives an interesting re-interpretation of the frontier hypothesis. Moncrief argues that: "His [Jackson´s] thesis can be extended to interpret the expansionist period of our history in Panama, in Cuba, and in the Philippines as a need for a continued frontier challenge."[50]

Correspondingly, Gray Brechin states frankly that the frontier thesis: "readied Americans for the acquisition of new frontiers in the Pacific and the Caribbean to compensate for those that, according to the 1890 census, had irrevocably closed on that portion of North America claimed by the United States."[51]

[46] A theme number of *Environment and History* 10 (November 2004) provided overviews of environmental history practised in Africa, the Americas, Australia and New Zealand, China and Europe as well as on the world scale. For an example from South-Asia see: Arnold and Guha 1995; and for Antarctica: Pyne 1986.
[47] http://www.foresthistory.org/Research/biblio.html
[48] Voltaire 1970, 46.
[49] Turner 1894.
[50] Moncrief 1970, 508-512.
[51] Brechin 1999, 285.

A rereading of Väinö Voionmaa through the lens of Frederick Jackson Turner´s frontier hypothesis could also be very instructive. Through this lens, his main works on the history of Finnish tribes can be interpreted as a story of several and partially, in both time and space, overlapping closing frontiers, from fur and fishing frontiers to slash-and-burn cultivation frontiers and finally field cultivation frontiers.[52]

Two recent articles, one by Michael Adas on the expansion of the colonial rice frontiers on the great river deltas of mainland Southeast Asia, and one by Lise Sedrez on Latin American environmental history, show that the frontier is still an useful concept in environmental history. The Great Plains of vanishing buffalos are in Southeast Asia replaced by vanishing swamps and elephants, while in the Latin America, frontier histories usually mean deforestation. Still it always means hardship for indigenous people.[53]

Furthermore, the atmosphere could be treated as a closing frontier, with the recognition of the problems related to emissions of greenhouse gases. The question is how we can ready the consumers in affluent societies to the fact that this frontier is irrevocably closed. Perhaps we need some backwards reading of the atmospheric frontier analogy to Cronon´s wish and attempt to read Turner backwards in Nature´s Metropolis.[54] You could also ask whether the frontier experience could explain differences in environmental attitudes between the old and the new continent?

Summary and conclusions

This article showed the futility of searching for a single point of creation of Environmental history, especially as we do not even have an unambiguous definition of what it is. I argue, taking an analogy from natural sciences, that the search for a single point of creation, a.k.a. creationism, should be abandoned in favor of an evolutionary path towards present-day environmental history, and into its glorious future without rigorous disciplinary constraints. In the end environmental history is a matter of perspective, instead of treating the environment as a background where “history” takes place; it uplifts the environment to one of the historical actors.

An evolutionary approach can be useful to understand the birth and development of environmental history, and in the practice of environmental history itself. By examining the interaction between the humans and their environment in a co-evolutionary way, we can avoid the trap of Ellsworth Huntingtonian environmental determinism, although we give a fair share for environmental factors explaining human history.[55] An evolutionary approach allows crossbreeding the “false starts” of environmental history back to life bringing helpful insights to present day practice. An example of this is the continued re-use and re-cycling of Turner´s

[52] Turner 1894; Voionmaa 1915 & 1947.
[53] Adas 2009, 191-207; Sedrez 2009, 255-275.
[54] Cronon 1991.
[55] Huntington 1915.

frontier hypothesis. The atmosphere, for example, can be treated as a closing frontier, with the recognition of the problems related to emissions of greenhouse gases.

The need to fill a great variety of ecological niches and circumstances explains the great diversity within environmental history. A meaningful study of the mutual relations between humankind and the rest of nature requires different methods in different locations and circumstances. This is also the reason for the large reliance on multidisciplinary or interdisciplinary approaches in environmental history.

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Japheth Kirui Koros

Major changes in water supply and sanitation in Kenya since the mid-1800s to 2000s

Water supply in Kenya dates back to the time when Kenya was still the East African protectorate under the British.

British East African Protectorate
Water Supply History

The formation of the British East African Company, gave rise to the need of providing for a safe corridor for its caravans to Uganda. This led to a pressure for the British government to take over this intermediate territory. The British Government took the territory on 1st July 1895. The British declared the land between Mombasa and the Great Rift Valley as a protectorate. This protectorate was known as The East African Protectorate. By then, the transport system to Uganda was not very satisfactory; hence the decision to build a railway line from Mombasa to Kisumu was conceived and in 1901, the construction of the railway line reached Kisumu.[1]

Of the several factors that provided impetus for the development of water supplies in Kenya, the Uganda Railway is regarded as the pioneer. Before the start of the building of the Uganda Railway, there was no single piped water in Kenya. Natives derived their water supply from rivers and springs and transported it home in various types of receptacles ranging from clay pots to buckets made from hides. In dry areas people moved from place to place in search of water. Generally, no attempts were made to bring water to the people; rather it was the person who went after the water.[2]

The first piped water supplies were developed and managed by the Railway to serve towns such as Mombasa, Nairobi, Nakuru, Kisumu, Eldoret and Kitale. In Nairobi for example, the initial water supply was developed from the Kikuyu Springs in 1906. It was later sold to the Nairobi Municipal Corporation in 1922. In Nakuru, the Railway put up a dam at the Njoro River by 1901 to supply water to the Nakuru Station and when the Public Works department developed water supply from the Mereroni River in 1913/15, the railway managed it for the Public Works Department. As the railways grew

[1] UNESCO, 2006 Kenya National Water Development Report 2006

[2] Juuti, 2007 Book Section "History of Water Supply and Sanitation in Kenya, 1895-2002", pp. 270-320

stronger and expanded its operations to Eldoret in 1924, the need for water became inevitable and hence the railway developed a water supply to the station and the town in 1928 from the Sosiani River.

Records at the Kenya Railways water supplies show that almost 70 per cent of all the railway water supplies were developed in the first 20years of its operations. The mode of delivery included gravitational and pumping by diesel engine or hydram from water sources including springs, boreholes and rivers. The railway water supply system was untreated. As the Public Works department developed new township water supplies, some railway water supplies were abandoned as the railway connected to the new supplies.[3]

Sanitation History

Traditionally, people used 'natural sanitation', open space, plantations or bush for human waste disposal. For some, the alternative was to bury in shallow holes referred to as 'cat method'. The use of rivers was also reported in some communities. The earliest and most widely used modes of conservancy were the bucket latrine and the pit latrine. Bucket latrines consisted of single and double sanitary pails. The single bucket system was introduced by the colonial administration around 1900/04, at a time when the railway townships came up. Initially single bucket latrines were more prominent than double bucket latrines. At the same time, some crude forms of pit latrines were evident. The development of sanitation also followed closely the development of the railway.[4]

The proliferation of towns pre-empted the need for a proper sanitary administration and management. Various departments played different roles in the installation and administration of sanitation works, the Ministry of Health under Public Health Department and the railway authority being the principal participants in the beginning. The district/provincial administration and the public works department played a secondary role.

Kenya Colony and Protectorate (1920-1963)

Between 1920 and independence in 1963 the first attempts were made at regulating water supply in the colony and protectorate of Kenya, while responsibility was shared by many institutions. In the 1950s and early 60s, responsibility for the administration of water supply was split between three

[3] Juuti, 2007 Book Section "History of Water Supply and Sanitation in Kenya, 1895-2002", pp. 270-320

[4] Juuti, 2007 Book Section "History of Water Supply and Sanitation in Kenya, 1895-2002", pp. 270-320

institutions: the Ministry of Works operating in urban centres with centralised water service provision; Local Authorities that were deemed capable of managing water supply; and the Water Development Department, which was responsible for developing new water supplies for urban and rural centres. Bulk water to Mombasa was provided by the Mombasa Pipeline Work, while day to day operations of water pipelines were carried out by the water department. There was no single framework for the administration and management of water. In 1952 the Water Act Cap 372 was enacted, which remained the legal basis for the water sector until 2002.

In the sanitation subsector there was no functioning institutional framework either. Officially, the 1921 Public Health Ordinance gave the Ministry of Health the role of administering sanitation, but it was rarely enforced. The local population, moreover, was reluctant to adopt sanitary measures imposed by the colonial government. Between 1929 and 1939 intense public health education campaigns were carried out which led to the diffusion of pit latrines. By 1954 different types of sanitation were in use in different parts of Kenya: pit latrines were in use in most native reserves, bucket type latrines prevailed in towns while waterborne sanitation was used in the European quarters of major towns. During the Mau Mau uprising Africans were concentrated in detention camps and local markets were kept closed out of fear of rebellion. This led to the neglect of adequate sanitation and in the proliferation of communal latrines.[5]

Independent Kenya (1980-2000)

As Kenya gained independence in 1963, attempts at simplifying the administration of water supply resulted in the transferal of all organizations responsible for water to the Ministry of Agriculture in 1964. The distribution of responsibilities and authority was however unclear and led to bottlenecks and inefficiencies. In 1965 the government led by Jomo Kenyatta stated in the Sessional Paper No. 10 on African Socialism and its Application to Planning in Kenya that government policy had to be directed towards the eradication of poverty, illiteracy and disease. This initiated a period of active involvement in water policy by the government, based on the principle that water is a social good to be either provided free of charge or subsidized. As a result, water tariffs between 1970 and 1981 were heavily subsidized and in contradiction with the principle of operating cost recovery.

[5] Juuti, 2007 Book Section "History of Water Supply and Sanitation in Kenya, 1895-2002", pp. 270-32

Throughout the 1960s, the Environmental Sanitation Programme supported by WHOUNICEF was carried out in Kenya with the aims of developing water supplies for small rural communities, improving waste disposal methods and providing sanitary education for the rural population. The rural water supply schemes set up as part of the programme were operated by County Councils (under the Ministry of Local Government). In 1972 about 560 rural water supply schemes were running in Kenya and provided water to a population of about 664,000, UNICEF reported. Local communities also started developing their own water supplies and set up water committees: they received training about design systems, hydraulic calculations, costs and submission methods. A follow up study by UNICEF carried out in 1974 showed the many problems that affected these projects.

In 1970 the Government of Kenya signed a credit agreement with Sweden to finance Rural Water Supply Development. The WHO was to provide a study of the water situation in the country. The study, completed in 1973, showed that in Kenya there was a major lack in senior and technical staff; while donors could provide most development funds, current expenditure could not be covered by local funds and the Government lacked a long term plan of water supply development. In response, a fully-fledged Ministry of Water Resources Management and Development was created in 1974. The ministry took over government operated water schemes as well as those operated by county councils.[6]

In the same year the National Water Master Plan Initiative was launched. Its primary aim was to develop new water supply schemes and secure access to potable water within reasonable distance to all Kenyans. The initiative bore the slogan, “Water for all by the year 2000.”

By 1979 it was becoming obvious that the goal of water for all by 2000 was not achievable and GOK issued new targets for the international drinking water supply and sanitation decade - 100% coverage in urban area and 75% in rural areas.
The GOK policy of District Focus for Rural Development became operational in 1983 with responsibility for the planning and implementation of infrastructure and other activities transferred to the district level. As part of the national approach to the expansion of rural water supplies, the concept of the integrated promotion of improved approaches to the use of improved water supplies and enhanced attitudes to sanitation and hygiene (WASH) was encouraged. The Kenyan water sector experienced serious difficulties in the 1990s. The stagnant political situation condoned political interference, bad governance and corruption. The direct water provision by the government became less efficient and exhibited serious failures. The necessary water reforms were overdue but were not

[6] Juuti, 2007 Book Section “History of Water Supply and Sanitation in Kenya, 1895-2002”, pp. 270-320

overtaken due to a lack of political goodwill. The water projects continued, in principle, to be supported by central government line agency organization (Ministry – Provincial Water Engineer's office – District Water Engineer's office – Division Water Engineer's office). Up to 1993 the supplydriven need based subsidized approach was applied to programme implementation.[7]

Water Policy, 1999

The definitive policy for the sector was promulgated in April 1999 as Sessional Paper No. 1 of 1999. This is the National Policy on Water Resources Management and Development which calls for de-centralization of operational activities from the central government to other actors, including local authorities, the private sector and increased involvement of communities in order to improve efficiency in service delivery. Sessional Paper No. 1 of 1999 also tackled issues pertaining to water supply and sanitation facilities development, institutional framework and financing of the sector. To enable sustainable water supply and sanitation services, there is need to apply alternative management options that are participatory through enhanced involvement of others in the provision of these services but particularly the private sector. The government would ensure an enabling environment through appropriate policies and regulation.

In line with the above principles of the water policy, the Water Act 2002 section 46 establishes a board to be known as Water Service Regulatory Board to oversee the provision of water services. While, section 51 requires the establishment of Water Services Boards, which in effect decentralizes water services management in the country. Section 55 requires the WSBs to arrange for the exercise and performance of all or any of their powers and functions under license by one or more agents, the Water Service Providers.

The overall policy objective is to lay the foundation for a rational and efficient framework for meeting the water needs for national economic development, poverty alleviation, environmental protection and social well-being of the people through sustainable water resource management.[8]

Sanitation legislation

For the period covering 1980 to 2002, altogether 31 sewerage treatment plants were constructed. Advancement in sanitation technology has been slow indeed. The pit latrines introduced at the turn of

[7] MOFA, (Ministry of Foreign Affairs of Finland) 2009 Evaluation of Finnish Aid To Western Kenya; Evaluation 2009:5

the century remain the most widely used mode of excreta disposal in Kenya. The progression towards water borne sanitation and sewerage has been slow and limited to the cities and urban centers.

There is no specific legislation on sanitation and the public health act remained the most relevant statute as at 2000 as far as sanitation was concerned. There are, however, other statutes fragmented along other ministries that touch on matters pertaining to sanitation, such as the Local Authorities Act Cap265, and the Chiefs Act. For example, the Chiefs Act has been used to enforce adherence to the Public Health Act when there is an emergency. Section (10) and (12) of the Act have occasionally been used by the government to force rural households to dig and construct pit latrines during cholera or typhoid outbreaks.[9]

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[8] UNESCO, 2006, Kenya National Water Development Report 2006

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Japeth Kirui Koros

NSS Student Report

I am a student of the Department of Civil and Construction Engineering at The University of Nairobi, Kenya pursuing a master's degree in Water Resource Engineering.

The three month exchange program visiting International Environmental History Group, Department of History at University of Tampere (UTA) and Capacity Development of Water and Environmental Services team, Department of Chemistry and Bioengineering Tampere University of Technology (TUT) through UWAS project has been such an excellent opportunity for me to expand my knowledge on the relevance and application of history in current and future planning, management and governance of water and sanitation services.

Through the stay, I have attended three courses; Management Options of Water Services (TUT), Water and Society (UTA) and a Research Training Course organized by VIWAFU (Viable Water Management and Governance for Futures) network at University of Latvia, Latvia. I also did four book reviews on the books *Water, Time and European Cities- History Matters for the Futures, From a Few to All – Long-term Development of Water and Environmental Services in Finland, Water Services Management and Governance – Lessons for a sustainable future, Water a Matter of Life- Long-term strategic thinking in water services* and made field trips to the water reservoirs of the city of Tampere currently in use and the ones formally being used.

Some of the main lessons I learnt from the program are;

- Water is important and has shaped society. History reveals that water was at the center of beginning of many civilizations. Water-borne technology was the author of most civilization, entire civilizations were built up on the infrastructure of complicated irrigation systems, shipbuilding was the basis of fishing fleets, merchant fleets and navies, some ancient administrative centers grew partly because of water related development .Great historians tagged water to the genesis of life, in about 450BC, the Greek philosopher Empedocles attempted to crystallize this idea scientifically by proposing that all substances are made up of four elements – earth, air, fire, and water. That idea, later developed by Plato lasted for 2000 years! Water influenced society's way of life even in the biblical times. The word water is used 772 times in the Bible, one of the Holy writings; that is less than God, Jesus, heaven or love, but many more times than faith, hope, prayer or even worship.

- It is necessary to understand the past as we explore future possibilities in development of water and sanitation services. As George Santayana rightly put it, *He who forgets the past is doomed to repeat it.* Through the History Research (HR) and Futures Research (FR), it is apparent that there are trends in water and sanitation management and thus lessons to be picked from past events for current and future application.
- That there is a wide array of management options for water services from country to country. There cannot be a one-fits-all approach to management of water and sanitation services.
- While making decisions on water management and governance, countries developing their water systems should learn from the relevant experiences of those with developed systems.
- I have also learnt the water history of Finland, the current developments in management of water and sanitation services and by virtue of residing in Finland, experienced the good quality of water and water services and appreciated the water infrastructure as well.

I intend to integrate these lessons learnt and experiences in my academic research process and in practice also as a developing professional in the water and sanitation sector of my home country.

Finally, I would wish to express my appreciation to The Government of Finland for funding my study through UWAS and CADWES programs, Universities of Nairobi, Tampere University of Technology, University of Tampere and the body of Professors that offered the courses, field trips and training.

The Author

Japheth Kirui Koros is currently pursuing a MSc. in Civil Engineering (Water Resource Engineering) at the University of Nairobi, Kenya and has an undergraduate degree in Environmental and Bio-Systems Engineering from the same University.

Tapio Katko awarded with James C Dooge Prize 2013

Dr. Tapio S. Katko was avarded with James C Dooge Prize in IWHA 2013 conference in Montpellier, France. Dr. Tapio S. Katko is a qualified civil engineer who has been active in the water sector for more than 30 years. As an academic he has excelled at teaching and conducting research, specifically in the field of water history. At the postgraduate level he has supervised 10 PhDs and more than 30 Masters studies –all in the field of water. In the field of research he has authored 36 scientific monographs. He holds a UNESCO chair in Sustainable Water Services at Tampere University of Technology where he has, for many years been a member of faculty and adjunct professor.

His main research interests and competences are water history and the long-term development of water and related infrastructure as well as institutional management, policy and governance issues in the water sector.

Figure 1: Dr. Tapio S. Katko

He has been a member of the International Water History Association since 2001 and also served a term of four years (2006-9) on the IWHA council when he served with distinction as one of the organizers of the 2007 IWHA biennial conference in Tampere, Finland. As water historian he has been active in the field both at the local and global levels.

During its biannual conferences, IWHA biannual Water Prize hands out its Dooge Prize to an eminent scholar in water history or a person who has strongly supported the historical study of water. The prize is named after James C Dooge (30 July 1922 – 20 August 2010), Irish politician, engineer, climatologist, hydrologist and academic in hydrology, climate change, and water history. He was member of the first council of IWHA.

During the 2007 conference in Tampere, Finland, the first Dooge prize was handed out posthumously to Dr. Dooge. During the 2011 conference in Kruger, South Africa, the second Dooge prize was handed out to Dr. András Szöllösi-Nagy.

International Environmental History Group (IEHG)

Finland is often called as the land of a thousand lakes; in fact there are some 180,000. Therefore, we are very proud of our natural heritage and we do live close to water and nature. The home town of IEHG is Tampere, which has a long history of pulp, paper and textile industries. Despite of her smoky past and dozens of downtown chimneys, today, our city is a dynamic centre of education, research and business, aiming to a sustainable future.

The IEH Group was set up on a chilly winter afternoon in early 2001. Their aim to research and promote different subdisciplines of environmental history. Dr. Petri S. Juuti is the head of the IEHG. The home university of IEHG is University of Tampere. At the moment, Petri Juuti, Harri Mäki, Riikka Rajala, Vuokko Kurki, and Viktor Pál are the members of IEHG. Their aim to research and promote different subdisciplines of environmental history.

Our latest publication is Ympäristöhistoria Finnish Journal of Environmental History, YFJEH. YFJEH is a new peer referee journal, published in the Internet by IEHG. YFJEH brings together scientists and practitioners from a wide scope of disciplines to examine relationships between the environment and human actions over time from the history to the future(s). Our languages are Finnish and English.

YFJEH provides a forum for peer-reviewed research in the field of environmental history. We welcome articles especially focusing to Finland but also other articles are welcomed in Finnish and in English.

More our activities:
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Capacity Building of Water and Environmental Services (CADWES)

Research team on Water Services

The Capacity Building of Water and Environmental Services (CADWES) research team based at Tampere University of Technology (TUT) has been active for more than a decade.

Vision: CADWES has defined its vision to become an internationally recognised research group.

Mission: The mission of CADWES is to produce usable knowledge, based on trans-disciplinary research on the evolution and development of sustainable use of water services and water resources in the wider institutional context of organisations, management, legislation and policy including formal and informal institutions.

Values: The team wishes to promote the following values: Global responsibility, Problem orientation, Innovativeness, Social effectiveness, Interaction, Multi- and trans-disciplinarity, Openness and encouragement, Importance of history and futures, Equity and equality.

Research approaches: The CADWES team argues that the bias in favour of a positivistic approach and natural sciences in water research results in inadequate answers to wider water governance challenges and institutional and management issues. Water research should be expanded to include diverse multi-, pluri-, cross-, and inter-disciplinary approaches in cooperation projects, while individuals could be encouraged to seek trans-disciplinary competence. Indeed, there is *increasing worldwide interest* to find *alternative ways* for improving urban and rural water systems and services and their governance. In addition to technology, we need to study institutional, management and policy issues.

The current research themes deal with regionalisation, operational improvements, pricing, asset management, rehabilitation, aging infrastructure, aging workforce and tacit knowledge management, small systems management, public-private collaboration, leadership and stewardship, more transparent decision-making and significance of water. The team covers e.g. engineering sciences, economics, history research and futures research and is also open to other disciplines.

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Ympäristöhistoria Finnish Journal of Environmental History (YFJEH)

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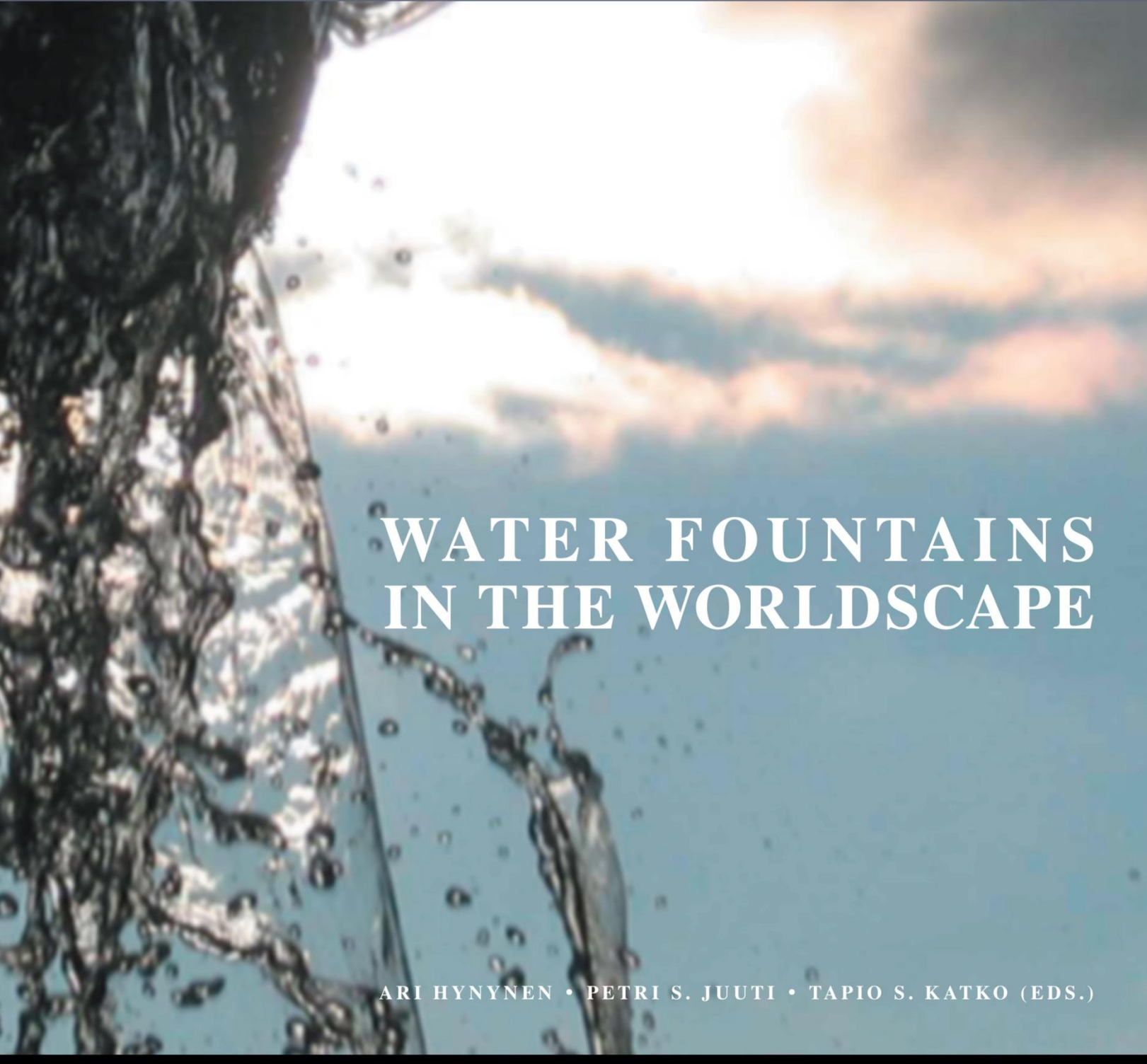

New book “Water Fountains in the Worldscape”

By Hynynen, Juuti & Katko (Eds., 2012)
The book is co-published through IWHA and KehräMedia.

This first-of-a-kind book presents an overall view of water fountains in different environments. That is quite surprising considering that most cities and townships have at least one fountain!

“While going through the pages of the manuscript for the purpose of writing the foreword, it dawned on me how many scholars, most well known and highly respected in the water history fraternity, shared the passion and vision of the editors of this book. Each contribution has required many hours of painstaking work. The illustrations accompanying the lively text titillate the senses. They transmit images of natural motion and fluidity. This study is a fountain of metaphorical delight shedding light on a water feature that has thrived on human creativity – primarily with the objective of beautifying a functional facility intended to provide water – the most valuable resource”
-Johann Tempelhoff, IWHA President 2009-2011

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